Comment Set 18, cont.

S-2f Ensure Proper Cathodic Protection. The Applicant shall conduct a close interval survey over the entire length of the new pipeline within six months of the hydrostatic test performed prior to operation. The surveys shall be conducted in accordance with NACE standards, using both on and off rectifier readings. If inadequate cathodic protection level or cathodic protection interference is identified, these situations shall be corrected. The Applicant shall submit a report, documenting the results of the close interval inspections and any intended action to CSLC (and any other agency with permit jurisdiction), within six months after completing the close interval survey. Additional test stations shall be installed within any section found below NACE recommended levels or in areas with cathodic protection system interference; the location and spacing of these test stations shall be reported to CSLC (and any other agency with permit jurisdiction). Subsequent close interval surveys shall be conducted within six months of the DOT required annual cathodic protection survey, on sections of pipeline that show cathodic protection levels below NACE recommended levels. The Applicant shall submit a report, documenting the results of these subsequent close interval inspections and any intended corrective action to CSLC (and any other agency with permit jurisdiction), within six months after completing the close interval survey. These other agencies may include, but are not limited to, Office of the California State Fire Marshal Pipeline Safety Division, the United States Department of Transportation Office of Pipeline Safety, and any other agency with environmental permit or land ownership responsibilities. (These requirements are more restrictive than the minimum requirements included in 49 CFR 195.) . ***Conflicts with DOT pipeline safety regulations*** **18-14**

Residual Impact. With the proposed mitigation, the likelihood of external corrosion causing a pipeline accident will be reduced, but even with inspections, external corrosion remains a frequent cause of pipeline accidents. As stated above, Impact S-2.1 remains significant (Class I), requiring that the CSLC prepare a Statement of Overriding Considerations for project approval. ***But not for this pipeline. This analysis is faulty since it does not consider that this pipeline will be smartpigged at intervals sufficient to detect and mitigate external corrosion anomalies prior to failure.*** **18-15**

Impact **S-2.2: Internal Corrosion**
Internal corrosion could cause a pipeline accident. (Potentially Significant, Class II)

Impact **Discussion**
Internal corrosion is another cause of unintentional pipeline releases. Although refined petroleum products are generally not considered corrosive, 49 CFR 195.418 outlines the regulatory requirements for internal corrosion control and monitoring. ***Refer to Subpart H- Corrosion Control*** **18-16**

Comment Set 18, cont.

Reference: S-2g **Pipeline Markers**. The Applicant shall install and maintain durable line markers in sufficient quantity and at such locations to ensure continuous line-of-site marking along the pipeline (two line markers visible from any one location); however, markers shall in no case be installed more than 1,000 feet apart. Markers shall also be installed and maintained on each side of all paved and unpaved road crossings, on each side of all railroad crossings, and on each side of all waterways. ***Conflicts with DOT pipeline safety regulations.***

18-17

Reference: Impact S-2.5: Design Flaw (Engineering)

Design flaws or incomplete/inadequate engineering can contribute to likelihood of a pipeline accident. (Less Than Significant, Class III)

Impact Discussion

Design or engineering flaws are not noted as causing a large percentage of the unintentional pipeline releases. However, this does not necessarily mean that proper engineering design is not a factor in minimizing the likelihood and severity of an unintentional release. To the contrary, a quality engineering effort will reduce the likelihood and severity of releases caused by a number of factors. For example, the engineering effort can reduce the likelihood of external corrosion–caused releases by enhancing the design of the cathodic protection and coating system. Employing certain engineering techniques can reduce the frequency of third party damage–caused releases. The likelihood of over-stressed pipeline conditions can be virtually eliminated (e.g., pipe can be installed in a manner which protects it from geological and other hazards).

A third party engineering review, or an independent third party construction inspection, is not required by 49 CFR 195 or any other applicable regulation. Although 49 CFR 195 does require that "each pipeline system must be constructed in accordance with comprehensive written specifications or standards that are consistent with the requirements of this part." Third party design reviews and inspections are employed in many other industries to help protect public safety, public health, the environment, property, and/or the public welfare. For example, the widely adopted Uniform Building Code gives local building officials the responsibility for independent design reviews (plan checks) and construction observations of buildings and structures prior to occupancy.

To minimize the risks associated with pipeline operation, the CSLC should implement the design review defined below, prior to pipeline operation.

Comment Set 18, cont.

Pipeline Design Review. Prior to final approval of the construction drawings, the CSLC will conduct an independent third party design review of the Applicant-proposed construction drawings and specifications. The intent of this review and observation would be to help ensure adherence with the project mitigation measures, the project construction drawings and specifications, and the minimum regulatory requirements. Further, this effort would help ensure that the Applicant-proposed design measures are actually constructed, project specific needs are met, and the adopted mitigation measures are incorporated into the design and pipeline construction. In addition, compliance with the applicable codes, standards, regulations, industry practices, etc. would be verified. The design review and construction observation services would not in any way be intended to relieve the Applicant of its responsibility and liability for the design, construction, operation, maintenance or emergency response of these facilities. ***The State Fire Marshal performs this function as DOT's interstate agent. Federal and state law gives exclusive authority to the State Fire Marshal over pipeline safety. Any issues regarding enforcement would be forwarded to DOT.***

18-18

Mitigation Measure for Impact S-2.5: Design Flaw

Assuming CSLC implementation of design review defined above, no additional mitigation is required. ***Conflicts with DOT pipeline safety regulations***

S-3a Pipeline Abandonment Procedures. Once the majority of the product has been removed, a series of foam pigs shall be pushed through the abandoned pipeline to remove any residual product. This process shall be repeated until the pigs are free of residual product.

18-19

Over time, local land uses and other site environments will change. As a result, it would be impossible to prepare a plan that would adequately cover future abandonment at this time. As a result, the Applicant shall submit a site-specific letter report to the CSLC or any other agency with permit authority, at least 60 days prior to any pipeline abandonment. The report shall evaluate any potential risks that could be imposed by the deteriorated pipe acting as an underground conduit and any potential negative effects of soil settlement, should the pipe be left to deteriorate. If the CSLC or any other responsible agency determines that abandoning these segments in place may cause adverse effects to the specific land uses at certain locations, the abandoned sections shall be removed or shall be filled with concrete, grout, or clean drilling mud, to avoid potential impacts.

Comment Set 18, cont.

The specific action shall be determined by the CSLC and other responsible agencies after review of the Applicant's letter report.

Additionally SFM must approve abandonment procedures

18-19

Reference: Impact G-5: Fault Rupture

Active fault crossings could result in pipeline rupture. (Significant, Class I)

Impact Discussion

Oil and gas pipelines can be designed to withstand substantial fault movement without rupture when the direction and magnitude of anticipated offset is well defined. However, because of the uncertainties regarding direction and magnitude of anticipated offset and because fault-crossing design has not been thoroughly tested by nature, two of the pipeline's active fault crossings (Concord and Green Valley faults) are designated as significant and unmitigable (Class I) impacts. Anticipated fault offset at the active Concord and Green Valley fault crossings ranges from three to six feet, but could be as great as 9.5 feet (URS, April 2003). Fault movement of this magnitude would likely result in pipeline rupture even if all protective design measures are implemented. Refer to the Department of Transportation publication "Common Ground" for pipeline best practices, to O'Rourke and Liu (1999), and to additional literature regarding pipeline design in areas of geologic hazards.

Mitigation Measures for Impact G-5: Fault Rupture

18-20

G-5a General Fault Crossing Design Parameters. In order to develop site specific measures for final pipeline design for individual fault crossings, the Applicant shall complete final geotechnical studies at the Concord, Green Valley, and Cordelia Fault crossings to accurately define the fault plane location, orientation and direction of anticipated offset and to refine fault crossing design parameters prior to construction of the pipeline. In order to retain the pipeline's ductility, the pipeline shall be aligned to cross the fault with as close to a 90° angle as possible to avoid shortening or large compressive strains during fault movement. Other appropriate design and operational procedures to be considered for incorporation during final pipeline design include, but are not limited to, engineered backfill, thicker wall pipe, MOVs on either side of the fault crossings and/or use of seismic switches/alarms.

The geotechnical reports shall be submitted to the CSLC and the affected counties' public works departments, and the recommendations shall be incorporated into the final pipeline design.

Comment Set 18, cont.

18-20

The required Supplemental Spill Response Plan defined in Mitigation Measure S-2a (Section D.2) will include adequate specific measures for containment, clean-up/restoration of product spills resulting from pipeline rupture that could possibly reach surface water and/or identified sensitive habitat either directly or through any conduit including overland or subsurface flow. However, the site-specific content of the Supplemental Spill Response Plan due to pipeline rupture at the following fault locations cannot be known until final pipeline design and shut-off valves are determined. At a minimum, the Supplemental Spill Response Plan shall be revised as necessary to reflect final pipeline design in the vicinity of the listed faults; submitted to the CSLC for review and approval at least 60-days prior to placing the pipeline in service; and contain the following information:

- Delineation of the extent of the maximum expected worst-case product spill at each fault location;
- Characterization of the conditions and habitat value of the plants, animals, soil and water within the delineated area;
- Placement of sufficient, centrally located, spill response resources to minimize ecological damage resulting from a potential spill at the listed fault locations;
- A programmatic outline for the restoration of conditions and habitat values within the impacted area as characterized prior to the spill event;
- A commitment to the satisfaction of the CSLC for the payment of a mitigation fee, in-kind restoration of like-habitat, or other similar measures equivalent to the temporary loss in habitat value occurring from the time of spill to successful restoration as determined by approved methodologies of the Department of Fish and Game, U.S. Fish & Wildlife Service, or other appropriate agency.

Concord Fault. Pipeline construction for the Concord Fault crossing shall be accomplished by HDD utilizing a minimum 0.5-inch pipe wall thickness and include a system for monitoring and controlled shutdown of the pipeline. This shall be accomplished through installation of an additional MOV at approximately MP 0.5 (or such other location determined by the CSLC during review and approval of final pipeline design plans) to limit the volume of product released should movement of the Concord Fault cause rupture of the pipeline. Pipeline design shall also follow the general parameters described above as appropriate.

Comment Set 18, cont.

Green Valley Fault. Pipeline construction for the Green Valley Fault crossings shall utilize a minimum 0.5-inch pipe wall thickness. MOVs shall be installed on both sides of the fault crossing to limit the volume of product released should rupture occur; these valves shall be installed at or near MP 10.0 and 10.52 or such other location determined by the CSLC during review and approval of final pipeline design plans. Pipeline design shall also follow the general parameters described above as appropriate. **18-20**

Cordelia Fault. MOVs shall be installed on both sides of the fault crossing to limit the volume of product released should rupture occur; if determined to be necessary by the CSLC during review and approval of final pipeline design plans. Pipeline design shall also follow the general parameters described above as appropriate.

Potential Conflict with DOT pipeline safety regulations. State Fire Marshal will review seismic design.

G-5b Pipeline Operations Plan. At least 60-days prior to placing the proposed pipeline into service, SFPP shall submit to the CSLC for final review and approval, a revised Pipeline Operations and Maintenance Plan (POMP). The POMP shall address internal and external maintenance inspections of the completed facility, including details of the integrity testing methods to be applied, corrosion monitoring and testing of the cathodic protection system, leak monitoring, emergency response procedures and protocols. The POMP shall also include and address all applicable operational mitigation measures contained in this document including, but not limited to, geohazard analysis for monitoring fault crossings, procedure for pigging the pipeline in the vicinity of fault crossings following a seismic event, liquefaction areas, landslide zones, and settlement. Within three months following promulgation of any new Federal or State regulation relating to issues and requirements contained in the approved POMP, SFPP shall update the POMP and submit a revised copy to the CSLC for review and approval. **18-21**

SFPP shall incorporate the following practice into the POMP for review and approval by the CSLC at least 60-days in advance of construction: ***Conflicts with DOT pipeline safety regulations.***

Comment Set 18, cont.

- Immediately following an earthquake within the parameters shown in the table below, that causes pipeline rupture, or that causes the pipeline to be shut-down, qualified SFPP operations personnel shall inspect all parts of the pipeline alignment that fall within the specified distance of the earthquake epicenter for evidence of ground deformation (e.g., cracks or displacements). If surface fault rupture is reported or observed, the pipeline alignment within at least 1,000 feet of the rupture shall be inspected. SFPP shall submit reports of its findings to the CSLC. In the event of pipeline shut-down or rupture due to a seismic event, the pipeline shall not be re-operated without prior review and approval by the CSLC. ***Conflicts with DOT pipeline safety regulations.*** **18-21**

Earthquake Magnitude (Richter scale)	Epicentral Distance (miles)
6	5
6.5	10
7	15
7.5	20

Reference: D.8.2.2 State **18-22**

Water Well Protection
Guidelines of the State Department of Health Services (DHS) require that new wells be located at least 200 feet from a petroleum pipeline. Therefore, construction of an oil pipeline within 200 feet of an existing well would need to be reviewed by DHS to ensure that the pipeline does not become a source of contamination for the well. Special pipeline casings or other contamination-preventing devices may be required within the 200-foot radius.

California Government Code Sections 51017.1 and 51017.2 require a Pipeline Wellhead Protection Plan to be prepared for pipelines located within 1,000 feet of a public drinking water well.

Regulations to implement this code section have not been finalized.

Reference: **HS-4a Adequate Pipeline Burial and Protection**. The minimum burial depth of the pipeline at stream crossings shall be equal to or greater than the 100-year depth of scour plus four feet, the 100-year depth of scour times 1.3 (whichever depth is greater), or such other minimum depth required by the CSLC for waterway crossings within its jurisdiction based on the results of final geotechnical analysis. A registered civil engineer shall demonstrate the pipeline burial depth at each crossing to be at or below this depth. All pipeline burial plans, with backup engineering analysis and calculations, shall be reviewed and approved by the CSLC 60 days prior to construction. ***SFM to review for compliance with federal pipeline safety regulations.*** **18-23**